

Developing a Culturally Responsive E-Module: Integrating Baduy Traditional Wisdom into Digital Citizenship Education

Damanhuri¹, Aceng Hasani¹, Ujang Jamaludin¹
¹Universitas Sultan Ageng Tirtayasa, Banten, Indonesia

Corresponding author e-mail: damanhuri@untirta.ac.id

Article History: Received on 8 September 2025, Revised on 6 October 2025,
Published on 17 November 2025

Abstract: The integration of local wisdom into digital learning is essential to foster culturally relevant and engaging education. This development research aims to create and validate a citizenship education e-module that incorporates the indigenous knowledge of the Baduy community in Indonesia. Using a 4D (Define, Design, Develop, Disseminate) model, this research involves needs analysis, module design, and expert validation. The electronic module, designed with Canva and Heyzine Flipbook, integrates Baduy's core values such as collaboration, environmental awareness, and customary law. Validation by media experts using Aiken's V formula resulted in a score of 0.88, indicating a 'highly valid' product. The results demonstrate the feasibility of creating high-quality interactive digital learning resources that effectively instill local cultural values. This electronic module is poised to enhance civic education by making it more contextual, enhancing cultural literacy, and strengthening national identity, as well as being ready for empirical testing. This research is a pioneer in designing and validating Citizenship Education e-modules based on Baduy local wisdom, using development (4D) and empirical validation (Aiken's V) approaches, so as to make conceptual, methodological, and practical contributions to the integration of local culture in digital education.

Keywords: Baduy Local Wisdom, Civic Education, Digital Pedagogy, E-Module

A. Introduction

Civics Education (PKn) is crucial in shaping students' character and personality in accordance with the values of Pancasila. (Kusumawardani et al. 2024; Liu & Turner, 2018) emphasizes that Civics Education aims to develop intelligent and virtuous citizens within the context of Indonesian nationality. Its primary goal is to shape individuals who reflect Indonesian identity, national pride, and patriotism. One of the primary goals of the Civics Education curriculum is to foster awareness of national identity as a vital element of national development.

Analysis of students' prior knowledge indicates that many students, especially those from urban backgrounds, have limited understanding of the local wisdom traditions

of their regions, including Banten, where they study. Students are often unfamiliar with cultural symbols, practices, and principles, hindering their ability to connect these to the more abstract theoretical components of citizenship education (Saaida, 2023; Rajashekar, 2021). As a result, students often perceive national identity in a limited way, focusing only on formal symbols, language, or historical narratives, while ignoring the role of local wisdom in nationalism and patriotism.

Interviews with Civics students underscored the need for relevant, engaging, and contextually grounded teaching materials. Students stated that civics education is important when connected to real-life contexts and local culture; however, they also observed that current materials are boring and lack visual and interactive elements.

Despite the growing dialogue on the importance of contextual learning, there is still a lack of empirical studies on the integration of local wisdom, particularly Baduy traditions, in the development of interactive e-modules for Civic Education. Damanhuri et al. (2025) assert that Baduy wisdom, rooted in Pikukuh Tilu and the Sunda Wiwitan belief system, transcends traditional practices and serves as an ethical and legal framework that promotes social, cultural, and environmental sustainability. Practices such as huma (traditional agriculture), leuweung kolot (protected forests), and oral traditions (taboos) exemplify the synergy between humans, nature, and spirituality.

Recent studies (Safitri et al., 2025; Julianti et al., 2025; Aqil et al., 2025) demonstrated that integrating local wisdom into digital learning improves engagement, interactivity, and educational outcomes. This study addresses this significant gap by creating an e-module for civic education that incorporates Baduy traditional wisdom, aiming to enrich digital pedagogy, enhance cultural literacy, and strengthen national identity.

B. Methods

This research uses the Research and Development (R&D) methodology, specifically the 4D model (Thiagarajan et al., 1974): Define, Design, Develop, and Disseminate. In the *refine phase*, based on the results of the student questionnaire, the need for digital learning resources that integrate local wisdom content with civics education. In addition, the analysis of the Civics Education curriculum in Higher Education is relevant to the civics values practiced by the Baduy community. In the design phase, the design in the development of the Civics e-module based on Baduy local wisdom rests on a balance between educational value and cultural beauty. Each element is designed not only to be informative, but also inspiring, inviting students to understand civics values through the lens of the simple yet meaningful life of the Baduy community. The visual design features angklung motifs, traditional houses, natural colors, and a flowing narrative. The principle of interactivity is applied so

that students not only read, but also think, dialogue, and reflect on Baduy values that are integrated into the content of Civic Education materials translated into descriptions of learning materials that are visualized into supporting images and videos about the life of the Baduy community. In the design phase, Canva and Heyzine flipbook are used so that the material can be presented attractively and have good accessibility and interactivity. In the development phase, the teaching materials that have been prepared are then validated by 3 experts who have expertise in media and design, civic education material experts and language experts. Validation emphasizes usability, clarity of navigation, professional aesthetics, and suitability to educational objectives.

The validation instrument used was a Likert scale questionnaire:

4 = Very Valid

3 = Valid

2 = Invalid

1 = Totally Invalid

Aiken's V formula is used to determine the validity index. According to Aiken (1985), $V \geq 0.80$ indicates "very valid", $0.70 \leq V < 0.80$ "valid", $0.60 \leq V < 0.70$ "sufficient", and $V < 0.60$ "not valid". Three main aspects are assessed: (1) graphic design, (2) ease of use, and (3) content-feature alignment.

$$V = \frac{\sum(s)}{n \cdot (k-1)}$$

Information:

s = validity value given by the expert

n = number of experts who carried out the assessment

k = number of items or aspects assessed in the e-module

(Source: Azwar, S. 2018)

The aspects evaluated include the visual elements of the display/design, the ease of use of the e-module teaching materials, and the suitability of the content and features of the e-module teaching materials. The data analysis methods used include qualitative descriptive analysis represented by percentages and qualitative analysis derived from input and recommendations from media experts. According to Aiken (1985:132), the validation results from media experts are categorized as follows: $V \geq 80\%$ (very valid), $70\% \leq V < 80\%$ (valid), $60\% \leq V < 70\%$ (somewhat valid), and $V < 60\%$ (invalid). The level of validity is determined based on Table 1.

Table 1. Validity Category

Range of values	Validity category
0.0-0.4	Less Valid
0.41-0.80	Legitimate
0.81-1.00	Very Valid

C. Results and Discussion

The Citizenship Education e-module effectively incorporates Baduy principles, including collaboration, environmental responsibility, and cultural respect. Expert validation confirmed that the module is interactive, visually appealing, and accessible across multiple devices (laptops, tablets, and smartphones). Features include intuitive navigation, legal typography, an engaging color palette, instructional prompts, integrated videos, practice exercises, summaries, a glossary, and citations.

Validation results showed an average Aiken's V of 0.88 (very valid), with 15 aspects classified as "very valid" and 5 as "valid." The validator recommended including authorship information, user guidelines, and formatting modifications. Revisions were made as needed.

These findings corroborate previous research (e.g., Baiq et al., 2025; Daluti, 2024) that emphasized the effectiveness of contextual digital modules and multimedia in enhancing cultural engagement and literacy. This research reinforces the concept of "cultural contextualization in civic education" (Nila & Talib, 2021), which suggests that local wisdom enhances cultural literacy while strengthening civic values and identity. Crucially, direct engagement with Baduy leaders ensures cultural authenticity, thus preventing superficial folklorization (Marisdsatul & Yanti, 2023). Local values are integrated with civic concepts. Baduy values such as mutual cooperation, simplicity, and adherence to customary law are contextualized with Pancasila values and civic responsibility. This creates a bridge between cultural experiences and the abstract academic concepts of civics. Intuitive navigation, harmonious visuals, and a gradual learning sequence manage learners' cognitive load. Documentary videos, reflective quizzes, and a digital glossary enhance engagement and strengthen the transfer of meaning. In other words, the success of this e-module is supported by several factors, namely the integration of local values with the concept of citizenship, learning design that minimizes cognitive load and multimodal interaction.

This e-module embodies Culturally Responsive Pedagogy with several characteristics: Baduy local wisdom is used not only as an illustration but also as a fund of knowledge that is the primary source of Civics learning. Students are encouraged to view traditional values as the foundation of citizenship, not as

artifacts of the past, and learning activities encourage students to compare Pancasila values with customary practices, thus developing critical awareness and cross-cultural empathy.

Table 2. Media Expert Validation Results

No	Aspects/Items Assessed	Val I	Val II	Val III	s1	s2	s3	Σs	n(c-1)	V
1	Display layout on balanced e-module	4	4	3	3	2	8	9	0.89	High
2	Selection of interesting background color	4	4	3	3	2	8	9	0.89	High
3	Overall color display is interesting to look at	4	4	3	3	2	8	9	0.89	High
4	Interesting typeface selection to view	3	4	4	2	3	8	9	0.89	High
5	Easy-to-read font size selection	4	4	4	3	2	8	9	0.89	High
6	The placement of navigation buttons	4	4	3	2	3	8	9	0.89	High
7	The backing music used is appropriate	3	4	4	2	3	8	9	0.89	High
8	The video used is interesting to view	3	4	4	2	3	7	9	0.78	Middle
9	The images used are interesting to look at	3	4	3	2	3	7	9	0.78	Middle
10	The sound in the video is clear	3	4	4	2	3	7	9	0.78	Middle
11	There is a button that fits with the button command	4	4	4	3	2	8	9	0.89	High
12	Button commands are easy to operate	4	4	3	3	2	8	9	0.89	High
13	Instructions for use of e-modules are clear	4	4	4	3	2	8	9	0.89	High
14	Placement of illustrations as background	4	4	4	3	2	8	9	0.89	High
15	Placement of titles, subheadings, illustrations	4	4	3	2	3	7	9	0.78	Middle
16	Not using too many typefaces	4	4	4	3	2	9	9	1.0	High
17	Use of font variations (bold, italic, etc.)	4	4	4	3	2	9	9	1.0	High
18	Able to express meaning of objects	4	4	3	3	2	7	9	0.78	Middle
19	Accurate and proportional shapes according to function	4	4	4	3	2	9	9	1.0	High
20	Creative and dynamic	4	4	4	3	2	8	9	0.89	High

The data shows that the average V is 0.89, the median V is 0.899, the minimum value is 0.778, and the maximum value is 1.000. Fifteen aspects are considered very valid, while five aspects are classified as valid. Thus, it can be concluded that this e-module is very valid, with an average value of 0.88. These data indicate that the e-module has met the functional and aesthetic criteria of digital learning. The e-module design pays attention to the principles of the cognitive theory of multimedia learning (Mayer, 2020) by using colors and icons as markers of the learning flow, the differences in the subject matter of complex explanations of video dissertations, images and captions are placed close together on the same page, the presence of navigation and the use of language according to student development.

The findings of this study emphasize the importance of a contextual learning approach through the creation of an e-module based on Baduy local wisdom, which serves as a systematic, empirical, and logical effort to improve Civics learning outcomes while strengthening students' cultural identity and national values. This

research not only advances innovation in digital learning media but also contributes to the preservation of local values as a fundamental aspect of national character education. This local wisdom-based Civics Education e-module was created using Canva and then converted into an interactive digital format through Heyzine Flipbook, allowing flexible access for students via laptops, tablets, or smartphones. Nevertheless, media experts offered insights for improvement. Recommendations and improvements are outlined below.

Table 3. Improvement Suggestions from Media Expert Validators

No	Validator Suggestion	Revision Results
1.	The cover page does not include the names of the promoter and co-promoter.	Include the names of promoters and co-promoters
2.	There are no instructions for using this module yet.	Complete the module with instructions for use
3.	Author profile not yet visible	Complete the builder profile
4.	The spacing between sub-chapters should be corrected	Fixed distance
5.	Images and image sources are placed in the center of the e-module page.	Place the image and its description in the center of the e-module page.

The validation results from media experts indicate that the e-module product exhibits variability in display design, multimedia, interactivity, accessibility, and technical quality, as evidenced by the score values of 3 and 4. Nevertheless, these results indicate that the average result is relatively high, namely 0.88, in the 'very valid' classification. This information indicates that the Citizenship Education e-module has been designed effectively and meets the specified validation criteria. The e-module has been validated and declared suitable for use in education.

The high validity of the e-module indicates that the integration of Baduy local wisdom values has been effectively integrated into an engaging and user-friendly digital learning medium. This result aligns with the findings of Baiq et al. (2025), who showed that an e-module based on problem-based learning, incorporating the local wisdom of the Sasak Tribe, demonstrated high validity due to its strong interactivity and contextuality in its design. This study integrated local values, including cooperation, simplicity, honesty, and adherence to Baduy customary norms, through illustrations, short documentary videos, and interactive narratives that foster students' social empathy. The validation results indicate that this e-module adheres to the digital learning design principles articulated by Daluti (2024), who underscores the need for a balance between aesthetic, interactive, and educational functions in project-based learning e-modules. This balance is evident in the adaptive user interface, cohesive color scheme, and culturally relevant media displays tailored to the attributes of junior high school students in the Banten region.

Furthermore, (Regita et al. 2024; Kassymova & Bamiro, 2023) , in their study of

textbooks rooted in local wisdom, highlighted that combining regional cultural content with a contemporary educational framework increases student motivation and engagement. This principle was evident in the study, particularly in relation to the validators' responses to the developers' success in representing Baduy cultural identity through symbols, weaving patterns, and narratives of daily life conveyed through animations and interactive videos.

These results theoretically validate the concept of "cultural contextualization in civic education media," where local values serve as a means to enhance civic character. (Nila and Talib, 2021; Wijayanti, 2025 ; Maftuh et al., 2025) assert that learning media based on local wisdom improves cultural literacy while strengthening civic literacy and awareness of national identity. The validity of this e-module demonstrates that integrating local cultural elements into media design is technically achievable while also being pedagogically and ideologically significant. The findings of this study further strengthen the perspective of Marisdsatul & Yanti (2023) that the advancement of culture-centered digital media must prioritize authentic representations of local culture to avoid superficial folklorization. Therefore, the creation of this e-module requires direct consultation with Baduy traditional leaders to ensure that the values presented align with the life principles of the Inner and Outer Baduy communities. Consultations with Baduy figures were conducted through direct consultations and traditional leaders checked the accuracy of terms and symbols to avoid distortion of mahna, filtered sensitive content to respect customs, and included visuals such as illustrations or documentation about the lives of indigenous people by including image sources.

This e-module, characterized by high media validity and strong integration of cultural values, is considered highly suitable for implementation in civic education learning. This e-module functions as a channel for disseminating knowledge and a cultural intermediary that instills ethical and national values through contextual digital learning experiences. However, there are still limitations to the results of this study, including not testing the effectiveness of the e-module on student learning outcomes and the e-module being specific to Baduy culture. Adaptation to other regions requires contextual guidance to avoid obscuring local characteristics.

D. Conclusion

The Baduy-based Citizenship Education e-module achieved a high validity score ($V = 0.88$) based on expert evaluation, validating its suitability for learning applications. This module is prepared for empirical evaluation regarding its practicality and efficacy in improving student learning outcomes. Future research should replicate this validation in various contexts and disciplines to assess its broader applicability.

E. Acknowledgement

Thank you to the promoters and co-promoters and all parties from Universitas Sultan Ageng Tirtayasa who have helped us in this valuable manuscript.

References

- Aqil, M., Pratama, RA, & Wahyuni, S. (2025). *The Development of Digital Teaching Materials Based on Local Wisdom at Elementary School Students*. 08 (06), 3287–3294. <https://doi.org/10.47191/ijmra/v8-i06-28>
- Baiq, NSZ, et al. (2025). Validity of PBL e-modules integrated with local wisdom in improving students' literacy and science process skills. *Journal of Physics Education and Technology (JPFT)*, 11 (1), 60–66. <https://doi.org/10.29303/jpft.v11i1.8741>
- Daluti, D. (2024). Development of project-based learning e-modules with local wisdom content in grade IV science lessons (IPAS). *International Journal of Basic Educational Research*, 1 (1), 11–19. <https://doi.org/10.14421/ijber.2024.11-02>
- Damanhuri, D., Hasani, A., & Jamaludin, U. (2025). Local Wisdom of Baduy Community: Systematic Literature Review on Social, Cultural, and Environmental Ethics. *Jurnal Moral Kemasyarakatan*, 10(2), 586–595. <https://doi.org/10.21067/jmk.v10i1.12010>
- Julianti, R., et al (2025). Analysis of the Development of Technology-Based Media and Learning Resources in Elementary Education. *Kalam Cendekia: Jurnal Ilmiah Kependidikan*, 13 (1). <https://doi.org/10.20961/jkc.v13i1.97314>
- Kassymova, G. K., & Bamiro, N. B. (2023). *Exploring the Potential of Integrating Local Wisdom into the Development of Pocket Book Learning Media: A Systematic Literature Review Exploring the Potential of Integrating Local Wisdom into the Development of Pocket Book Learning Media: A Systematic Literature Review*. October. <https://doi.org/10.26803/ijlter.22.10.8>
- Liu, Q., & Turner, D. (2018). *Identity and national identity*. 1857. <https://doi.org/10.1080/00131857.2018.1434076>
- Maftuh, B., Supriatna, M., & Anakotta, R. (2025). Promoting Cultural Literacy Through a Local Wisdom-Based Learning Model: A Research and Development Study in Elementary Schools. 6(3), 615–631. <https://doi.org/https://doi.org/10.46245/ijorer.v6i3>
- Marisdasatul, A., & Yanti, F.A. (2023). Development of local wisdom-based science Learning e-book modules for Madrasah Aliyah students. *Islamic Education: Journal of Islamic Education*, 12(4), 707–714. <https://doi.org/10.30868/ei.v12i04.4856>
- Nilu, N.S., & Talib, A. (2021). Development of ethnomathematics e-modules based on local wisdom to improve students' cultural and civic literacy. In *Proceedings of the International Conference on Educational Studies in Mathematics (ICoESM 2021)* (pp. 111–120). Atlantis Press.

- <https://doi.org/10.2991/assehr.k.211210.018>
- Rajashekar, N. (2021). *International Journal of Early Childhood Special Education (INT-JECSE) Inclusive Education : Barriers and Challenges in Inclusion*. 13 (02), 3188–3193. DOI:10.48047/intjecse/v13i2.21194
- Regita, VP, Suhartiningsih, S., Nurdianasari, N., Darmayanti, V., & Hutami, TS (2024). Textbook based on local wisdom for learning text description in Indonesian language subjects for grade IV. *Scientific Journal of Education and Learning*, 8(2), 266–275. <https://doi.org/10.23887/jipp.v8i2.72734>
- Saaida, M. (2023). *Language, Culture, and Power: Exploring the Dynamics of Communication Across Differences*. July, 1–3. <https://doi.org/10.5281/zenodo.10884323>
- Vanessa, A. (2024). *Digital Media And Cultural Identity: Exploring Intersections, Impacts, And Challenges*. 4 (3), 305–317. <https://doi.org/10.57233/gujos.v4i3.17>
- Wijayanti, Y. (2025). *Enhancing Students' Cultural Identity Through History Education Based on Local Wisdom of Kagaluhan Values*. 14. <https://doi.org/10.22521/edupij.2025.14.75>